BAMBOOS AND BAMBOO CULTURE

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What Are Bamboos?

Bamboos are grasses, many attaining giant size. Corn, wheat, oats, rye, and barley are all near relatives of the bamboos. All these plants have more or less rounded stems divided into joints, each joint marking the point where there is a transverse partition. The stems of practically all bamboos are hard and woody when mature and are capable of withstanding great stresses and strains despite their light weight. Bamboos produce flowers and seeds resembling those of grains like rye and barley. With most bamboos, flower and seed production occurs at very rare intervals, often 50, 60, or even 100 years elapsing between blooming periods. In consequence of this habit of rare seed production, it is difficult to propagate bamboos and more difficult to classify and name them. Many bamboos die after flowering, so it is fortunate that these events come at rare intervals.

Bamboo shoots from an old established grove grow with amazing rapidity, often attaining full height, which may be 60 or more feet, in three to four weeks. Figure 1 shows new shoots of the giant timber bamboo in the foreground. This grove is near Savannah, Ga., and the full-grown stems are 60 to 70 feet high.

Native Homes of Bamboos

Bamboos are mild-climate plants. None are found native in the colder temperate regions. The United States has only two native species. These occur in the Southern States south of Virginia and westward to southern Missouri. They constitute our so-called canebrakes, once more or less common but now becoming rare. Central America and South America are much richer in these beautiful plants, of which nearly 150 native species have been reported, mostly from the tropical regions. Asia, and especially China, is the richest of all regions in bamboo species. In fact, Asia may be regarded as the home of most of the valuable economic species now scattered over the earth. Nearly 500 species of bamboos have been described, and more than two-thirds of these are from Asia and adjacent islands.

Bamboos in History

It is not surprising that a group of plants of such surpassing beauty and usefulness should furnish an ever-fresh theme for song, story, and romance. Oriental literature is replete with references to the bamboo and the innumerable ways in which it enters into the life of the people. There is something awe-inspiring and impressive about these giant grasses that makes for reverence and sober thought. It is like entering a cathedral to go into the comparatively small groves we have in this country. Figure 2 shows the interior of a grove of giant timber bamboo.

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It is not surprising that this country, being almost entirely lacking in bamboos, should early have made attempts to introduce them. Some of the most successful of these introductions were made by travelers visiting the Orient, who saw and doubtless marveled at the beauty and uses of the plants and succeeded in bringing in and establishing a few here and there, mostly in the South. Nurserymen, florists, and owners of private estates were also instrumental in bringing in bamboos from time to time. Although many rare plants were introduced into California and the Pacific coast through Mexico prior to the discovery of gold in that region, the bamboo does not seem to have been brought in. As soon as trade was opened up with the Orient, however, bamboos began to reach the Pacific coast direct, and thus a good many rare forms found a home in the warmer parts of California.

FIG. 1.—New shoots of giant timber bamboo in the foreground. Shoots grow from 1 foot to 1½ feet in a day

The first systematic attempts at bamboo introduction were inaugurated by the United States Department of Agriculture soon after the organization of the Office of Foreign Plant Introduction, something over a quarter of a century ago. Between 60 and 75 species of bamboos have been introduced by this office, but a good many of those first brought in failed of establishment. Introductions made during the last five or six years have been more successful, as improvements have been made in cultural methods. Good collections have been assembled at the Barbour Lathrop Plant Introduction Garden, near Savannah,

Ga., also at the United States Plant Field Station at Bell, Md., near Washington, D. C.

Exclusion of Bamboos

For the last nine years there has been a ban on the introduction of living bamboos and bamboo seed from foreign countries. This step resulted from a desire on the part of the Federal Government to keep dangerous insects and other pests out of the country. Bamboos are still being brought in by the United States Department of

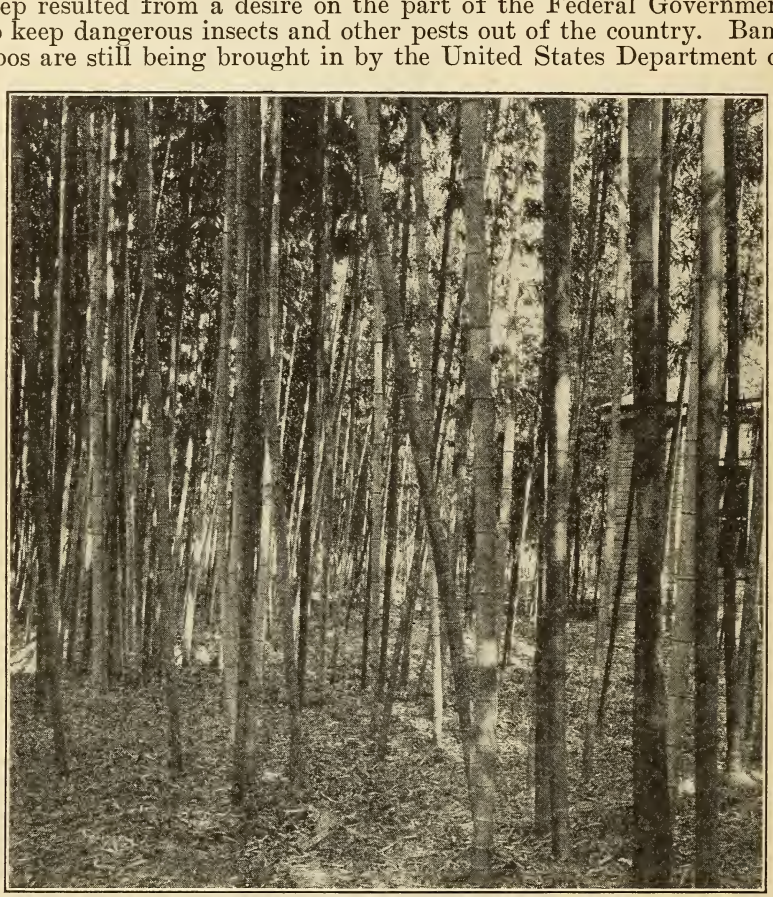

FIG. 2.—Grove of giant timber bamboo near Savannah, Ga. Age about 35 years. Plants are 40 to 60 feet high

Agriculture for experimental work, under strict quarantine arrangements. Introductions are confined to new and rare species and are necessarily limited in quantity. No plants are distributed until it has been thoroughly demonstrated that they are clean and free from all insects, diseases, or other pests.

Owing to the relatively slow growth of bamboos, the cost of production, and the difficulty of transportation, there are only a few places in the United States where plants can be procured. One of the primary objects of this leaflet is to encourage home production of species suitable for the establishment of groves and gardens.

Where Bamboos Will Thrive

Most bamboos will thrive wherever cotton is successfully grown. This means in all the South Atlantic States, the Gulf Coast States, and one or two interior States or parts of States, like southern Tennessee and southern Arkansas. Bamboos will also do well in the moist valleys in the western parts of the Pacific Coast States, and especially the west coast valleys of southern California.

The idea prevails that bamboos like wet land. Some of them will grow in such places, but the majority of species thrive best in fertile, well-drained soil. Any land that will grow good crops of cotton or corn will produce good bamboos. Areas with hardpan or impervious clays near the surface should be avoided.

Uses of Bamboos

Bamboo uses fall into three main groups: (1) Domestic purposes around the farm and farm home, (2) commercial production for manufacturing and for providing materials for food and in the arts, and (3) ornamentation and beautification of the landscape and the home.

Under domestic uses may be listed light portable fences; gates; trellises of many kinds; bean poles; pea stakes; stakes for flowers, tomatoes, and young trees; fishing poles; hay-curing racks; tool handles; rakes; poles for harvesting nuts and fruits; tree props; water-carrying pipes; sheds and shelters for tender plants; shelters and shades for tobacco, tomato, cabbage, and other small-plant beds; tobacco poles; chicken coops; and crates of many kinds.

Under commercial production may be mentioned material for furniture manufacture; paper and paper pulp; phonograph needles; barrels, baskets, buckets, and similar receptacles; barrel hoops; fresh shoots for food; brooms of various kinds; small buildings; materials for reenforcing concrete; fancy split fishing rods; florists' plant stakes; scaffolding; ladders; furnishings; and supplies for interior decoration.

The uses of bamboos for landscape ornamentation make a strong appeal, for there is no other group of plants which lends itself so readily and so strikingly to landscape architecture. For furnishing grateful shade in summer and protection against storms and winds at all seasons of the year they are unexcelled. They are suitable for avenue planting and are particularly adapted to street parkway planting. They add a touch of beauty to the homely shack, are well adapted to school grounds, and, when properly used, bring into striking contrast many of our beautiful southern evergreens, like the magnolia and the live oak. Where hurricanes occasionally occur, the clump bamboos stand up where many other plants, and especially trees, go down. They may therefore be regarded as valuable protective agencies.

Bamboo Gardens

There are very few bamboo gardens in the United States, but in England and along the south coast of France there are many strikingly beautiful ones. In bamboo gardens, species and varieties are brought together and so grouped as to bring out the striking and inherent beauties of each individual or small group of individuals, and at the same time present a landscape picture that may be won-

derfully attractive. Bamboos being evergreens, the landscape picture they present is as striking in winter as it is in summer; in fact, the winter picture is often even more striking, especially during and after light snows which are occasionally experienced in parts of the South.

Kinds of Bamboo to Grow

Bamboos may be divided into two groups: (1) Those that spread in all directions by means of underground runners, and (2) those that grow in more or less compact clumps or tufts, spreading slowly by a gradual enlargement of the clump at the margin. This leaflet deals with half a dozen kinds which several years of testing have proved to be worthy of extended planting.

The giant timber bamboo (figs. 1 and 2) spreads rapidly in good soil and grows to a height of 60 to 70 feet, with stems 3 to 5 inches in diameter. This is one of the most useful of bamboos, especially for domestic purposes. It would be well if every farm home in the

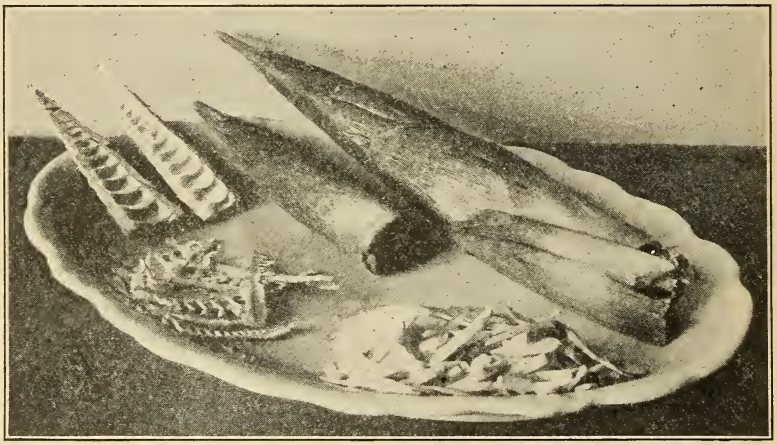

FIG. 3.—Shoots of the edible bamboo as removed from the ground and prepared for cooking

South Atlantic and Gulf Coast States had a small grove of this bamboo. It would prove a valuable asset to the home in supplying useful poles, and in addition would provide a beautiful and striking evergreen shade and windbreak.

The edible bamboo, another spreading form and one of the most beautiful of its kind, should find a place in many home gardens of the South Atlantic and Gulf Coast States. The young shoots in spring furnish a delicious vegetable and salad, while the poles, both large and small, serve for a great many uses in the garden, on the farm, and in the home. Figure 3 shows shoots of the edible bamboo prepared for cooking.

Two other bamboos similar to the giant form, but hardier and smaller, will be found useful as far north as northern Virginia, the whole of Kentucky, Tennessee, Arkansas, northern Texas, California, and western Oregon and Washington. These forms are known as the forage and stake bamboo and the dwarf hardy bamboo. Under favorable soil conditions these bamboos attain a height of

20 to 25 feet and will furnish valuable storm shelters and windbreaks, besides poles, canes, and stakes. The stems are large enough and light enough for fishing poles, and they also make good poles for harvesting pecans and other nuts.

Two bamboos of the clump type, suitable for the warmer parts of Florida and possibly for extreme southern Louisiana and Texas, are the Calcutta bamboo and the Indian cane bamboo. Both grow readily from seed which is produced in India. Both species grow in dense tufts; and on good soil, under favorable climatic conditions, they begin to produce fair-sized poles in five to seven years. The stems are nearly solid and are therefore comparatively heavy. When full grown these bamboos produce poles 60 to 80 feet high. Both of them give promise of being useful in southern Florida for windbreaks and storm protectors. They do not seem to thrive so well in the rocky, limestone soils, but wherever there are sand pockets or glade spots, or hammock land, they appear to be at home. Figure 4 is from a photograph of a fine clump bamboo growing in central Florida.

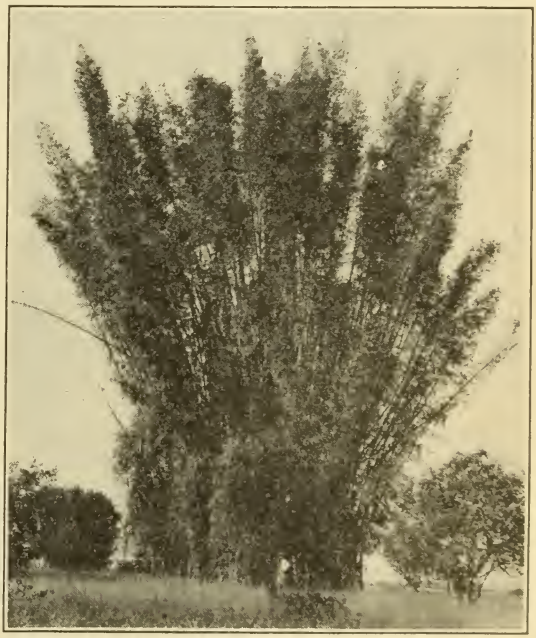

FIG. 4.—A fine clump bamboo (*Bambusa arundinacea*) growing in central Florida

Planting and Care of Bamboos

Select for a nursery a fertile sheltered spot in the garden or near the house where water is available. Spade or plow the ground to a depth of 8 to 10 inches and rake until all clods and lumps are broken. Open trenches 6 to 8 inches deep and 3 feet apart; then set the bamboo plants 18 inches apart in the trench. Use a garden trowel for planting, as it may be necessary to set some plants deeper than others. Use care in handling the plants, especially if the "eyes" or tender underground shoots have started. Each "eye" is a potential sprout and must be saved. Press the soil firmly around each plant, and water when the work is done. Two rows or trenches 25 feet long, more or less, will be required for 25 plants, four rows for 50 plants, and eight rows for 100 plants. One hundred good plants of the spreading type of bamboo will plant about three-fourths of an acre. Rows may be made any length that is convenient. Keep all weeds down throughout the summer and water the plants in case of prolonged dry weather. Watering is very important. In cultivating and weeding, care must be exercised

not to disturb the underground rhizomes, which soon begin to spread in all directions. When fall comes there should be strong clumps where each plant was put out. In sections where the ground freezes for 3 or 4 inches it will be best to cover the plants with pine brush or some similar material.

The second year the plants will be ready to transplant from the nursery to the groves. Select well-drained, fertile soil for permanent groves. A corner of a pasture near the barns or outbuildings, a corner of the dooryard, or a location suitable for future poultry yards will answer. It will be best to keep 50 to 75 feet away from the barns and dwelling house in the planting work. Plow and harrow the ground and lay it off 10 by 10 feet for the large timber bamboo, or 8 by 8 feet for the smaller and more hardy kinds. Carefully lift the clumps from the nursery with good balls of soil attached. February and March are the best time for this work. Use a spade in digging the holes, and after planting be sure to firm the soil around the roots. Finally give a generous watering. All weeds, and especially crabgrass and nut grass, must be kept down by hand pulling and hoeing. After the plants have started to grow, a mulch of well-rotted stable manure around each clump will be highly beneficial. Put the manure on 2 or 3 inches deep.

The clump bamboos may be handled in practically the same way as the creeping forms, being held in a nursery the first year and transplanted to the field the second year. For windbreaks the clumps may be put from 16 to 18 feet apart, and even 20 feet apart if the soil is deep and fertile. For block planting to produce poles, the Calcutta and the Indian cane bamboos may be planted 25 by 25 feet.

Propagation of Bamboos

Owing to the fact that most bamboos seldom seed, they are propagated by dividing the tufts or crowns, or breaking up the greatly ramifying underground parts. Timber bamboo, the edible bamboo, and the several smaller bamboos of the same type are all propagated by means of the underground rhizomes or runners. Unless bamboo growing is to be undertaken on a more or less extensive scale, it is best to procure the plants from sources where facilities are at hand for propagating them readily. Information based on a number of years of experimental work in propagating bamboos will be furnished to persons who may be interested in establishing nurseries for supplying plants suitable for home and commercial planting.

Distribution of Bamboo Plants

With a view to establishing experimental blocks, small groves, and test plots of bamboos throughout the Southern and Pacific Coast States, the United States Department of Agriculture is distributing limited numbers of the bamboo plants described. These are placed in the hands of cooperators who have proper facilities and suitable soil and climatic conditions for carrying on the work. For the information of those who may be interested in bamboos for the development of bamboo gardens or who may desire to bring together good collections of bamboos for study and for landscape beautification, a descriptive list of species and forms will be furnished on request.

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